

**Patent claims**

1. Arrangement for illuminating objects with light of different wavelengths in microscopes, automatic microscopes, and equipment for fluorescent microscopy applications that includes LED light sources for object illumination that are arranged in the illumination radiation path of the microscope or equipment,  
characterized in that
  - a receiving apparatus (6; 13) that is rotatable about an axis of rotation (5) is provided with mounts (7) for each of at least one LED (3; 3.1), whereby said receiving apparatus (6) is arranged in a housing (1) that can be attached to an equipment housing (18) or that is positioned in said equipment housing (18);
  - and in that a drive device (9) for defined adjustment of said receiving apparatus (6; 13) is provided such that said LED (3; 3.1) can be positioned upstream of a light emission aperture (2) of said housing (1) with the effective wavelength that is required for measurements and/or observations.
2. Arrangement in accordance with claim 1, characterized in that said mounts (7) are embodied and attached to said receiving apparatus (6) such that the main emission direction of said at least one LED (3; 3.1) arranged thereon runs parallel to said axis of rotation (5).
3. Arrangement in accordance with claim 1, characterized in that said mounts (7) of said receiving apparatus (13) are embodied such that the emission direction of said at least one LED (3; 3.1) arranged thereon runs radial to said axis of rotation (5).
4. Arrangement in accordance with any of claims 1 through 3, characterized in that collimator optics (11; 15) and/or a radiation homogenizer (16) is provided in said equipment housing (1) in the light direction downstream of said light emission aperture (2) of said housing (1).

5. Arrangement in accordance with any of claims 1 through 3, characterized in that at least one of said LEDs (3; 3.1) is a white light LED emitting a white light.
6. Arrangement in accordance with any of claims 1 through 5, characterized in that a Peltier cooling element (8) for cooling said LED (3; 3.1) is provided arranged between said mount (7) of said receiving apparatus (6; 13) and said LED (3; 3.1) arranged thereon.
7. Arrangement in accordance with any of claims 1 through 5, characterized in that a halogen light source (17) or another light source is arranged on at least one mount (7) of said receiving apparatus (6; 13).
8. Arrangement in accordance with claim 1, characterized in that said housing is arranged on said equipment housing (18) using a rapid change ring in the form of a dovetail.
9. Arrangement in accordance with any of claims 1 through 8, characterized in that said at least one LED (3; 3.1) is arranged exchangeably in said mount (7) without said associated Peltier cooling element (8).
10. Arrangement in accordance with any of claims 1 through 8, characterized in that said at least one LED (3; 3.1) is securely joined to said associated Peltier cooling element (8) and can be arranged exchangeably in said mount (7) together therewith.